

Wei-Cheng Chen

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Research Experience

Strategic Networking and Communications Lab

Taipei, Taiwan

Research Center for Information Technology Innovation (CITI), Academia Sinica

Research Assistant

Feb. 2018 – Present

Advisor: Dr. Chih-Yu Wang

- 2019/06 – Present, “Understanding User Behavior in Cross-domain Scenario”
 - Independently establish a query suggestion system aiming to discern users’ behavior of changing browsing domain
 - Commissioned by Verizon Media (Yahoo!), one of the largest web services providers in Taiwan
 - Design and implement a critical ingestion pipeline to process over 5 TB of e-commerce data from Verizon Media using Spark and Pandas
 - Develop novel embedding mechanism which collects time-/cross- domain features and conducted experiment via advanced deep learning framework (RNN-based, Attention) using TensorFlow and PyTorch
- 2018/02 – 2019/06, “Query Forecasting: Identifying Critical Learning Queries”
 - Analyzed data from Verizon Media’s e-commerce platform, which has millions of active users, and constructed a pipeline to analyze the textual embedding using Python, Shell scripts, and established modeling tools
 - Funded by Academia Sinica, the highest academic institution in Taiwan
 - Proposed and constructed a quasi-attention deep learning framework with TensorFlow, aiming to perceive customers’ purchasing intention. Simulation results verified the superiority of the proposed method
 - Paper presented at the ACM SIGIR 2019 Workshop on eCommerce (SIGIR eCom) with me as first author
- Maintained and managed four Linux/Ubuntu workstations used by more than fifteen members

Wireless Communications Lab, CITI, Academia Sinica

Taipei, Taiwan

Research Assistant

Jan. 2017 – Feb. 2018

Advisor: Dr. Wei-Ho Chung

- 2018/02 – 2020/01, “Foresight Research and Application in Financial Technology Industry”
 - Utilized Twitter content, technical analysis, and Natural Language Processing (NLP) to analyze US stock market
 - Funded by the Ministry of Science and Technology (Taiwan)
 - Implemented machine learning algorithms (Naïve Bayes, Support Vector Machine) under a semi-supervised learning framework to classify market sentiment using Python and SQL
 - Paper submitted to the IEEE Transactions on Neural Networks and Learning Systems in 2019 as leading author
- 2017/01 – 2018/02, “Pricing Short-term Options Contracts via Multi-path Simulations”
 - Proposed a compound and low-effort approach for pricing short-term options contracts via Autoregressive model and Monte Carlo methods
 - Paper presented at 61st Meeting of EURO Working Group for Commodities and Financial Modelling (EWGCFM) with me as first author

Publications

- [1] W. -C. Chen, and W. -H. Chung. Perceiving market sentiment: stock movement prediction via distant learning using social network data. Paper submitted to: *IEEE Trans. on Neural Networks and Learning Systems (TNNLS)*.
- [2] W. -C. Chen, and C. -Y. Wang et al. 2019. PSAC: Context-based purchase prediction framework via user’s sequential actions. Presented at: *ACM SIGIR 2019 Workshop on eCommerce (SIGIR eCom)*. July 25, 2019. Paris, France. Retrieved from <http://ceur-ws.org/Vol-2410>
- [3] W. -C. Chen, and W. -H. Chung. 2018. Option pricing via multi-path Autoregressive Monte Carlo approach. Presented at: *61st Meeting of EURO Working Group for Commodities and Financial Modelling (EWGCFM)*. May 16-18, 2018. Kaunas, Lithuania. Retrieved from <https://arxiv.org/abs/1906.06483>

Work Experience

Taiwan (The Republic of China) Marine Corps

Taipei, Taiwan

Private First Class (Mandatory Military Service)

Dec. 2015 – Dec. 2016

EverGrow Securities Investment Consulting Co. Ltd.

Taipei, Taiwan

Research Assistant (Internship)

Sept. 2014 – June 2015

- Performed daily/weekly tracking on global financial indicators and ad hoc analysis of macroeconomics issues
- Provided analysis to CEO on specific issues, such as ASEAN countries’ economy and EU’s monetary policies

Education and Professional Development

National Taiwan University (NTU)

Taipei, Taiwan

B.A. in Economics

Sept. 2011 – June 2015

- Overall GPA: 3.10/4.3, Last 60 GPA: 3.33/4.3
- Studies included ten-month industrial placement at EverGrow Securities Investment Co. (Sept. 2014 – June 2015)

National Taiwan University of Science and Technology (NTUST)

Taipei, Taiwan

Continuing Education Program

Feb. 2017 – June 2019

- Took courses with undergraduate students; credits granted if participant passed exams and completed all assignments.
- CS-related courses: Data Structures (A+), Operating Systems (A+), Neural Networks (A+), Programming Languages (A-), Computer Organization (A-)

Fu Jen Catholic University

New Taipei City, Taiwan

Continuing Education Program

Sept. 2018 – June 2019

- CS-related courses: Algorithms (A+), Linear Algebra (A+), Introduction to Computer Science (A+)

National Taiwan Normal University

Taipei, Taiwan

Continuing Education Program

Feb. 2019 – June 2019

- CS-related course: Discrete mathematics (A)

MOOCs

- Machine Learning (mostly deep learning), NTU, Prof. Hung-yi Lee
- Introduction to Algorithms, MIT, Prof. E. Demaine and Prof. S. Devadas

Leadership Experience

Knowledge Discovery and Data Mining (KDD) Cup 2019, Online

May 2019 – June 2019

- An annual data mining and knowledge discovery competition organized by ACM Special Interest Group on Knowledge Discovery and Data Mining, the leading professional organization of data miners
- Coordinated the development and implementation of a multi-class classification system via TensorFlow, XGBoost, and LightGBM frameworks to estimate the transportation preferences of Baidu Map users
- Team achieved top quartile position (443/1696) in the contest
- Source code: <https://gitlab.com/weijchen/kdd-cup-2019>

Future Elite Leadership Awards, Taipei, Taiwan

Aug. 2014 – Nov. 2014

- A financial evaluation competition, organized by the Registered Financial Planners Institute and Yuanta Commercial Bank, a top-tier financial institution in Taiwan; competition's objective was to discover financial planning talents
- Evaluated the feasibility of clients' financial plans based on given information, such as family background and lifetime financial targets, and provided asset allocation recommendations after conducting risk assessment
- Collaborated with five members and presented evaluation reports in the final round. Team won Second Prize (selected from over 40 teams)

Additional Information

Professional Skills

- Programming Languages: Python, C/C++, Java, JavaScript
- Data Analytics: TensorFlow, PyTorch, Keras, Spark, NumPy, Pandas, SciPy, IPython, SQL, NLTK
- Technologies: Unix/Linux, LaTeX, Git, Shell

Extracurricular Activities

- Cofounded NTU Collaborator, a student society providing industrial and macroeconomics skills training to students by means of teamwork projects and alumni sharing (working, analysis, and investment experiences), and was elected first President (Sept. 2013 – June 2015)
- Participated in NTU Securities Research Society, a student society offering weekly lectures on investment and financial markets, and was elected Leader of Academic Affairs Team (Sept. 2012 – June 2014)

Languages

- Mandarin (native), English (fluent, TOEFL 100/120, GRE 320/340 quantitative 169)